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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,836	01/08/2002	Eyal Oren	06057	4503

26327	7590	10/27/2004

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EXAMINER
CHACE, CHRISTIAN

ART UNIT	PAPER NUMBER
2187	

DATE MAILED: 10/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/042,836	OREN ET AL.
	Examiner	Art Unit	
	Christian P. Chace	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 September 2004</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-19 and 27-31</u> is/are pending in the application.

    4a) Of the above claim(s) <u>18 and 19</u> is/are withdrawn from consideration.

5)☒ Claim(s) <u>27-31</u> is/are allowed.

6)☒ Claim(s) <u>1-17</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>08 January 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Office action has been issued in response to amendment filed 20

September 2004. Claims 1-17 are pending. Claims 18-19 are withdrawn. Claims 20-

26 are canceled. Claims 27-31 are allowed. Applicants' arguments have been carefully

and respectfully considered, however, most are not persuasive, as will be discussed in

more detail below. The objections and rejections which applicants successfully argued

have been removed. Accordingly, this action has been made FINAL.

Election/Restrictions

Claims 18-19 are withdrawn from further consideration pursuant to 37 CFR

1.142(b) as being drawn to a nonelected invention, there being no allowable generic or

linking claim. Election was made **without** traverse in the telephone conversation with

Kirk Williams (#42,229) on 12 May 2002. Examiner notes that applicants did not

reaffirm that this election was without traverse in the instant response, but applicants did

not argue this assertion from the telephone conversation, repeated in the previous

Office action, either. Accordingly, this restriction has been made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of
making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with

the enablement requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As discussed supra, the specification does not enable one of ordinary skill in the art to make and/or use the claimed invention by being able to identify a nested condition without an indication of same.

One of ordinary skill in the art would not understand how the nested condition would be indicated by another mechanism whereby the piece of information does not include a nested condition indication. Claim 5 recites identifying a nested condition indication associated with a received piece of information. Claim 7 recites that the piece of information does not include a nested condition indication. The disclosure does not enable one of ordinary skill in the art to apply the limitation of claim 7 to the invention of claim 5. The specification discloses how to use the indication contained in the piece of information, but not how to use an indication not contained in the piece of information.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-17 are rejected under 35 U.S.C. 102(a) and (e) as being anticipated by
Uzun (US Patent #6,606,681).

The applied reference has a common assignee with the instant application.
Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art
under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome
either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in
the reference was derived from the inventor of this application and is thus not the
invention "by another," or by an appropriate showing under 37 CFR 1.131.

With respect to independent claim 1, a method is disclosed in the abstract.

Programming is interpreted by examiner to be writing. An associative memory is
defined in the instant specification to be, "all types of known or developed associative
memories...and other data structures," on page 7,line 16. Accordingly, optimized CAM
block 202 is a "data structure." A plurality of sets of entries is disclosed in column 10,
lines 60-61 as "entries in CAM 256" which is part of optimized CAM block 202. Each of
the plurality of sets of entries being associated with a different one of a plurality of
unique decoder fields, and each entry within a particular one of the plurality of sets of
entries including a same one of the plurality of unique decoder fields is disclosed in
column 10, lines 61-62, with tag bits #402 being the decoder value, and Key #404 being
the entry. See figure 4.

Receiving a piece of information and deriving a first lookup word are interpreted
by examiner to be the same thing. The instant claim recites, "...a piece of information
including a data item and a decoder value." The instant claim also recites, "...a first

lookup word including a data item and a decoder value." As these two definitions are

exactly the same, examiner has interpreted the piece of information as being the first

lookup word. Also, as they are the same thing, "receiving" it *is* "deriving" it (regardless

of any other *examples* [i.e., not limiting, as applicants are s careful to point out

throughout the specification] discussed in the instant specification). The piece of

information/look up word id disclosed in figure 4. Figure 4 is discussed in column 10

into column 11. Column 11, lines 15-17 specifically discuss using the piece of

information/lookup word for evaluation. In order to be evaluated, it must, inherently, be

received. The data item is key #404 and the decoder value is tag bits #402 from figure

4. Performing a lookup operation on the associative memory using the first lookup word

to generate a first lookup result is disclosed in column 6, lines 34 and 38-39 as returning

an address for a matching entry.

Receiving a second piece of information including a data item and a nested

condition indication is disclosed in column 5, lines 33-37. A nested condition is

extracted address information, as a nested condition is merely one constant inside

another. If address information must be extracted, clearly, it must be extracted from

something (constant), of which it was inside.

Identifying the nested condition is inherent in a nested condition indication. In

other words, if a nested condition is indicated, it is inherently identified.

Generating a plurality of lookup words in response to said identifying, each of the

plurality of lookup words including the data item and one of a plurality of predetermined

decoder values is disclosed in column 6, lines 34 and 38-39, and also in TABLE 1, with DA/SA bits being, "...one of a plurality....values."

With respect to claim 2, a first set of the plurality of sets of entries including a different number of entries than a second set of the plurality of entries is disclosed in column 2, lines 58-60.

With respect to claim 3, the decoder value including a set value and a subset value is disclosed in figure 4 as #402 containing set value #406 and subset value #408.

With respect to independent claim 5, in light of the same discussion of the similar limitations with respect to claims 1-3, a plurality of sets of entries is also disclosed in column 2, lines 58-60 as K*N.

Programming an associative memory with a plurality of sets of entries, each of the plurality of sets of entries including a different one of a plurality of unique decoder fields, receiving a piece of information including a data item, identifying a nested condition associated with the data item, and, in response to said identifying the nested condition, generating a plurality of lookup words with a predefined set of decoder fields of the plurality of unique decoder fields is also disclosed in column 7, line 57 into column 8, line 7.

With respect to claim 6, as discussed supra, the piece of information including a nested condition indication is inherent.

With respect to claim 7, the piece of information not including a nested condition indication is disclosed in the abstract as address information (that was not extracted, as discussed with respect to claim 1).

With respect to claim 8, at least two of the plurality of sets of entries having a different number of entries is disclosed in column 7 into column 8 by the formula K*N for each "set."

With respect to claim 9, each plurality of entries having at least two entries is disclosed in column 2, lines 58-60 as K>1, which includes, at least two.

With respect to claim 10, forwarding a lookup indication to "a receiver," which can be anything that receives, as it is not defined further in the specification, is disclosed as a HIT signal in figure 2B.

With respect to claim 11, the lookup indicator indicating the presence or absence of the nested condition is inherent. As the nested condition is the extracted address information, as discussed supra, a HIT signal would indicate the address's presence in the memory. No HIT signal would indicate the absence of the extracted address.

With respect to claim 12, the lookup indicator indicating a result context is disclosed in column 6, lines 61-64. Examiner interprets a "context" to be whether a source or destination address or both are involved. See TABLE 1 also in column 6.

With respect to claim 13, forwarding the plurality of lookup words to an associative memory is disclosed in column 6, lines 34 and 38-39.

With respect to claim 14, the associative memory including a ternary or binary CAM is disclosed in the title as "CAM." The CAM must, inherently, be binary or ternary, as there is no other kind of CAM.

With respect to claim 15, a computer-readable memory containing computer-executable instructions for performing the method of claim 5 is being treated, for the

purposes of examination, and an independent claim. It is anticipated by the prior art

cited with respect to claim 5. Also, a computer must always be told what to do, so using

instructions is inherent. See column 5, lines 38-40 and 51-54, also, which discusses

CAM control logic (that must, inherently, be programmed).

With respect to claim 16, performing a lookup operation on each of the plurality of

lookup words to generate a plurality of lookup results is disclosed in column 6, lines 34

and 38-39.

With respect to claim 17, comparing a first lookup result of the plurality of lookup

results with a second lookup result of the plurality of lookup results to identify whether to

perform processing based on the first or second lookup result is disclosed in column 8,

lines 15-20.

Allowable Subject Matter

Claims 27-31 are allowed.

Examiner notes that claims 27-29 invoke 35 USC 112, 6th paragraph via their use

of means-plus-function language. Accordingly, the details of the specification are

looked to in order to anticipate the claim language. As those details are not present in

the cited prior art of record in enough detail to anticipate the means disclosed in the

instant specification and their equivalents, examiner must find them allowable. Claims

30 and 31, which do not invoke 35 USC 112, 6th paragraph, but are dependent upon the

claims discussed supra, which do, are allowable for at least the reasons cited supra with

respect to same.

Response to Arguments

With respect to applicants' discussion of alleged confusion by the Office as to the use of the phrase "nested condition," examiner respectfully wishes to clarify his position after thorough review of the instant application in light of the telephone conversation between examiner and applicants' representative on or about September 1, 2004. The instant specification does not define "nested condition." The disclosure merely offers an example of what it might be. For example, at page 11 of the instant remarks, applicants offer what one embodiment uses the term for, and are careful to note that, "...this explanation is not limiting on the scope of the claims as they stand on their own merit in light of the entire specification and not just an excerpt discussed herein." While examiner agrees that one embodiment should limit the scope of claims in a patent application, the instant application does not define the term with enough specificity to allow it to overcome the cited prior art of record. This appears to be the central disagreement between examiner and applicants – is the claim language, read in light of the instant specification, anticipated by the cited prior art or record? Examiner maintains that it is, because of the very broad scope of the terms used in the claims. Even looking to the specification for any further clarification does not affect the interpretation of the claims, as they are no more narrowly defined therein. Examiner will hopefully clarify his position even further in the responses below.

With respect to applicants' response to the restriction requirement, as examiner noted supra, the requirement has been made final, and claims 18-19 are withdrawn.

With respect to the objections to the specification based on 35 USC 112, first

paragraph, examiner respectfully withdraws his objections. If applicants wish to define

"or" as "and" (in their commonly-used senses), as they may be their own lexicographers,

that is their prerogative. Applicants' explanation of the difference between

"programming" and "using" is persuasive. Applicants traverse the objection of use of

the term "wildcards." Applicants assert that the term "wildcard" is a term well known in

the art, and clearly understood by one skilled in the art. However, again, applicants do

not actually define the term, either in the instant remarks, or in the specification. Upon

further investigation, however, the word appears in many patent application publications

and patent in the US database system, so the objection has been removed as the term

is, apparently, a term with an accepted meaning to one of ordinary skill in the art.

Applicants' change of the word "while" tot eh phrase "in one embodiment" is persuasive

to overcome the objection. Applicants' explanation of lines 9-10 on page 15 of the

instant specification is persuasive, and the objection has been removed. However,

examiner suggests applicants may wish to even more clearly state their intention for the

benefit of the public should the instant application pass to issue. With respect to

applicants' traversal of the objection to use of the term "context," examiner has

withdrawn his objection, but notes that applicants still have not defined the term any

more particularly in the specification than it's ordinary meaning would give it – as

circumstances surrounding an event, for example. With respect to applicants' traversal

of the objection to the specification as not providing antecedent basis for the word,

"derive," examiner has withdrawn the objection in response to applicants' amendment of the specification to include the claim language.

With respect to applicants' traversal of the 35 USC 112, first paragraph rejection under the written description requirement, applicants' argument was persuasive, and the rejection has been removed.

However, with respect to applicants' traversal of the 35 USC 112, first paragraph rejection under the enablement requirement, applicants' argument was not persuasive, and has been maintained as discussed supra. One of ordinary skill in the art would not understand how the nested condition would be indicated by another mechanism whereby the piece of information does not include a nested condition indication. Claim 5 recites identifying a nested condition indication associated with a received piece of information. Claim 7 recites that the piece of information does not include a nested condition indication. The disclosure does not enable one of ordinary skill in the art to apply the limitation of claim 7 to the invention of claim 5. The specification discloses, as applicants discuss in the instant remarks at the bottom of page 14 into page 15, how to use the indication contained *in* the piece of information, but not how to use an indication *not* contained in the piece of information.

With respect to applicants' traversal of examiner's interpretation that receiving a piece of information and deriving a first lookup word in claim 1 are the same thing, examiner respectfully disagrees, and the interpretation has been maintained, as discussed supra.

Receiving a piece of information and deriving a first lookup word are interpreted

by examiner to be the same thing. The instant claim recites, "...a piece of information

including a data item and a decoder value." The instant claim also recites, "...a first

lookup word including a data item and a decoder value." As these two definitions are

exactly the same, examiner has interpreted the piece of information as being the first

lookup word. Also, as they are the same thing, "receiving" it *is* "deriving" it (regardless

of any other *examples* [i.e., not limiting, as applicants are s careful to point out

throughout the specification] discussed in the instant specification). The piece of

information/look up word id disclosed in figure 4. Figure 4 is discussed in column 10

into column 11. Column 11, lines 15-17 specifically discuss using the piece of

information/lookup word for evaluation. In order to be evaluated, it must, inherently, be

received.

With respect to applicants' argument that Uzun neither teaches nor suggests

generating multiple lookup words from a same piece of information in response to the

identification of a nested condition, examiner respectfully disagrees. First, applicants

assert, at the top of page 16 of the instant remarks, that, "Uzun's use of N entries with a

K*N entry RAM allows each of the CAM entries to be associated with K memory entries

for storing corresponding values. These are not lookup words." Examiner takes the

position that they are, indeed, lookup words in that they are used to look up other

information. Applicants have not defined the term any more narrowly than that.

Applicants, at page 16 of the instant remarks, assert that providing K contiguous

memory locations for each CAM entry (instead of one) allows more information to be

directly received in response to the match of a lookup word does not teach or suggest

multiple lookup words based on a received piece of information in response to

identifying a nested condition as recited in claim 1. Examiner respectfully disagrees –

when one takes into account that the piece of information and the lookup word are the

same thing, as discussed supra, and that a "nested condition" is exactly what Uzun

describes (K contiguous memory locations for each CAM entry (instead of one), (absent

any more specific definition in the instant disclosure), the cited prior art does, indeed,

anticipate the claim language as discussed supra. Applicants go on to assert that for at

least the reasons discussed in relation to claim 1, claim 5 and it's dependents are also

allowable. Examiner respectfully disagrees for at least the reasons set forth supra with

respect to claim 1 as well.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian P. Chace whose telephone number is 571.272.4190. The examiner can normally be reached on 9-4-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571.272.4201. The fax phone number for the organization where this application or proceeding is assigned is 571.272.2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christian P. Chace